CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 91-003

NPDES NO CA0038628

REISSUING WASTE DISCHARGE REQUIREMENTS FOR:

CENTRAL MARIN SANITATION AGENCY
SAN RAFAEL SANITATION DISTRICT
SANITARY DISTRICT NO. 1 OF MARIN COUNTY
SANITARY DISTRICT NO. 2 OF MARIN COUNTY
CITY OF LARKSPUR
IN MARIN COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter Board), finds that:

1. Central Marin Sanitation Agency (hereinafter the Agency) applied for waste discharge requirements and a permit to discharge waste under the National Pollutant Discharge Elimination System (NPDES) by application dated June 18, 1990.

2. The Agency owns and operates a regional sewage treatment plant in San Rafael as well as a deep-water outfall in San Francisco Bay (Central Bay) and main interceptors leading from the old treatment plants it replaced. The Agency is a joint powers agency governed by representatives of its four member agencies. These include: San Rafael Sanitation District, Sanitary Districts No. 1 and 2 of Marin County, and the City of Larkspur. The member agencies own their respective collection systems, although some have made agreements to hold another party responsible for system operation and maintenance. As used in this permit, the term "discharger" means the Agency and the four member agencies noted above.

3. The discharger also transports and treats sewage from four other sewerage agencies pursuant to separate agreements with member agencies. The four other sewerage agencies are: City of San Rafael, Murray Park Sewer Maintenance District, San Quentin Sewer Maintenance District, and California Department of Corrections (San Quentin Prison).

4. The Agency's treatment plant has a design capacity of 10.0 million gallons per day (mgd) average dry weather flow. The plant was originally designed to provide secondary treatment for flows up to 30 mgd, primary treatment for flows up to 90 mgd, and has a hydraulic capacity of 125 mgd. New flow meters have been installed which allow 40 mgd to flow to the

secondary units. However, storm events have not been large enough to evaluate the secondary units ability to effectively treat this additional 10 mgd.

5. This facility provides treatment as follows: Raw sewage passes through comminuters at remote pump stations and is pumped through force mains to the plant. Influent is metered and passes through bar screens and grit removal prior to primary sedimentation. Immediately following primary sedimentation, flows exceeding 40 mgd are transferred around the biological treatment units to the disinfection facility. Flows less than 40 mgd are treated by high rate trickling filters followed by conventional activated sludge, secondary settling, chlorination and dechlorination.

6. Treated effluent is discharged to San Francisco Bay (Central Bay) at a location 8,500 feet from shore at a depth of 35 feet MLLW and 35:1 initial dilution (37 deg. 56 min. 54 sec. Latitude and 122 deg. 27 min. 23 sec. Longitude).

7. Wastewater solids are digested in an anaerobic digester, centrifuged and currently disposed of at the Redwood Sanitary Landfill. Grit is also disposed at this landfill. The Discharger plans on beginning an eight month pilot study to evaluate the technical and economic feasibility of sludge composting. This project will be regulated by the Board under a separate action.

8. Average annual flow to the plant is 11.5 mgd. The average dry weather flow is 8.5 mgd. Monitoring data show the following wastewater characteristics:

Item (30 day average)	Value	Concentration: Influent	Effluent
CBOD		187 mg/l	7 mg/l
Suspended Solids		179 mg/l	10 mg/l
BOD % Removal	97%		
TSS % Removal	95%		

9. The discharger is presently governed by Waste Discharge Requirements, Order No. 85-118 and amendments #86-81 and #87-100 which allow discharge into San Francisco Bay (Central Bay).

10. The Regional Board adopted a revised Water Quality Control plan for the San Francisco Bay Region (Basin Plan) on December 17, 1986. The Basin Plan contains water quality objectives for Central San Francisco Bay and contiguous waters.

11. The beneficial uses of Central San Francisco Bay and contiguous water bodies include:
    a. Water Contact and Non-Contact Water Recreation
    b. Wildlife Habitat
    c. Preservation of Rare and Endangered Species
    d. Fish Migration and Spawning
    e. Industrial Service and Process Supply
    f. Navigation
    g. Commercial and Sport Fishing
    h. Estuarine Habitat
    i. Shellfish Harvesting

12. An Operation and Maintenance Manual is maintained by the discharger for purposes of providing plant and regulatory personnel with a source of information describing all equipment, facilities and recommended operation strategies, process control monitoring and maintenance activities. In order to remain a useful and relevant document, this manual should be kept updated to reflect significant changes in plant facilities or activities.

13. The Agency has an EPA-approved Local Pretreatment Program for source control and application of pretreatment standards.

14. This Order serves as an NPDES Permit, adoption of which is exempt from the provisions of Chapter three (commencing with Section 21100) of Division 13 of the Public Resources Code (California Environmental Quality Act) pursuant to Section 13389 of the California Water Code.

15. The Discharger and interested agencies and persons have been notified of the Board's intent to reissue requirements for the existing discharge and have been provided an opportunity for a public hearing and the opportunity to submit their written views and recommendations.

16. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to the provisions of Division 7 of the California Water Code and regulations adopted thereunder, and to the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, that the Discharger shall comply with the following:

A. <u>Allocation of Responsibilities</u>

Unless otherwise specified, the following requirements shall apply to the discharger (i.e. the Agency and four member agencies collectively).

B. Discharge Prohibitions

1. The bypass or overflow of untreated or partially treated wastewater to waters of the State, either at the treatment plant or from the collection system or pump stations tributary to the treatment plant, is prohibited.

2. The discharge of average dry weather flows greater than 10 mgd is prohibited. Average dry weather flow shall be determined over three consecutive dry weather months each year. Only the Agency is subject to this requirement.

3. Discharge of wastewater at any point where it does not receive a minimum initial dilution of 10:1 is prohibited.

C. Effluent limitations

1. Only the Agency is subject to the following requirements.

2. Effluent discharged shall not exceed the following limits:

Constituent	Units	Monthly Average	Weekly Average	Daily Maximum	Instantaneous Maximum
a. CBOD	mg/l	25	40		---
b. Total Suspended Solids	mg/l	30	45		---
c. Settleable Matter	ml/l-hr	0.1	---	---	0.2
d. Oil and Grease	mg/l	10	---	20	---
e. Total Chlorine Residual (1)	mg/l	---	---	---	0.0

(1) Requirement defined as below the limit of detection in standard test methods.

3. The monthly average of the carbonaceous biochemical oxygen demand (five-day, 20 degrees centigrade) and suspended solids values, by weight for effluent samples collected during a calendar month shall not exceed 15 percent of the monthly average of the respective values, by weight, for influent samples collected at approximately the same times during the same period (85 percent removal).

4. The pH of the discharge shall not exceed 9.0 nor be less than 6.0.

5. The moving median value for the Most Probable Number (MPN) of total coliform bacteria in any five (5) consecutive effluent samples shall not exceed 240 MPN per 100

milliliters (240 MPN/100 ml). Any single sample shall not exceed 10,000 MPN/100 ml.

6. The survival of test organisms acceptable to the Board in 96-hour bioassays of the effluent shall be a 90 percentile value of not less than 50 percent survival, based on the ten most recent consecutive samples.

7. Representative samples of the effluent shall not exceed the following limits in micrograms per liter (ug/l): (1)

Constituent	Daily Average (2)
a. Arsenic	200
b. Cadmium	30
c. Chromium(VI) (3)	110
d. Copper	200
e. Lead	56
f. Mercury	1
g. Nickel	71
h. Silver	23
i. Zinc	580
j. Cyanide	25
k. Phenols	500
l. PAHs (4)	150

(1) These limits are intended to be achieved through secondary treatment and applicable pretreatment programs.

(2) Average of all flow-weighted samples collected over a 24-hour period.

(3) The Discharger may at its option meet this limit as total chromium.

(4) Polynuclear Aromatic Hydrocarbons (PAHs). This limit applies to the summation of the detected levels of the individual constituent PAHs as identified by EPA Method 610 (i.e. Total PAHs). If a discharge exceeds this limit, the concentrations of individual constituents shall be reported.

D. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:
   a. Floating, suspended, or deposited macroscopic particulate matter or foam;

b. Bottom deposits or aquatic growths;

c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;

e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

a.	Dissolved Oxygen	5.0 mg/l, minimum.
	The median dissolved oxygen concentration for any three consecutive months shall not be less than 80 percent of the dissolved oxygen content at saturation. When natural factors cause lesser concentrations than those specified above, then the discharge shall not cause further reduction in the ambient concentration of dissolved oxygen.	
b.	Dissolved Sulfide	0.1 mg/l, maximum.
c.	pH	Variation from normal ambient pH by more than 0.5 pH units.
d.	Un-ionized Ammonia	0.025 mg/l as N, annual median; 0.16 mg/l as N, maximum.

3. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

E. Sludge Requirements

1. Permanent on-site sludge storage or disposal activities are not authorized by this permit. A Report of Waste Discharge shall be filed and the site brought into compliance with all applicable regulations prior to commencing any such

activity.

2. Sludge management and disposal practices shall comply with all current state and EPA regulations, including 40 CFR 257.

3. This permit may be reopened to include sludge management requirements promulgated under Section 405 (d) (2) of the Clean Water Act, provided that the existing permit contains less stringent sludge management requirements.

4. The discharger shall provide written notice to the Regional Board at least 90 days prior to making any significant changes in sludge disposal practices.

F. Provisions

1. Requirements prescribed by this order supersede the requirements prescribed by Order Nos. 85-118, 86-81, and 87-100. Order Nos. 85-118, 86-81, 87-100 are hereby rescinded.

2. Where concentration limitations in mg/l or ug/l are contained in this Permit, the following Mass Emission Limitations shall also apply:

(Mass Emission Limit in lbs/day) = (Concentration Limit in mg/l) x (Actual Flow in million gallons per day averaged over the time interval to which the limit applies).

3. The Discharger shall comply with all sections of this Order immediately upon adoption.

4. The Agency shall implement its approved Industrial pretreatment Program in accordance with Board Order 84-60 and its amendments thereafter. The discharger's responsibilities include, but are not limited to:

A. Enforcement of national pretreatment standards (eg. prohibited discharges, categorical standards, local limits) in accordance with 40 CFR 403.5 and Section 307 (B) and (C) of the Clean Water Act.

B. Implementation of the pretreatment program in accordance with the legal authorities, policies, procedures, and financial provisions described in the general pretreatment regulations (40 CFR 403) and the discharger's approved pretreatment program including subsequent modifications to the program.

C. Submission of annual and quarterly reports to EPA and the State as described in Board Order 84-60 and its amendments thereafter.

5. The Discharger shall comply with the attached Self-Monitoring Program. The Board's Executive Officer may make minor amendments to this Self-Monitoring Program pursuant to federal regulations (40 CFR 122.63).

6. The Discharger shall comply with all applicable items of the attached "Standard Provisions and Reporting Requirements" dated December, 1986 including section A.18 concerning bypasses.

7. In reviewing compliance with the limits of Effluent Limitations C.2 of this Order, the Board will take special note of the difficulties encountered in achieving compliance during periods of high wet weather flow.

8. Compliance with Effluent Limitation C.6. shall be determined using two test species in parallel, flow-through bioassays which use undiluted effluent. One test specie shall be the three-spine stickleback, and the other shall be either rainbow trout or fathead minnow.

9. The Discharger shall review and update its Operations and Maintenance Manual annually, or in the event of significant facility or process changes, shortly after such changes have occurred. Annual revisions, or letters stating that no changes are needed, shall be submitted to the Regional Board by April 15 of each year.

10. The Discharger shall review and update by December 31, annually, its contingency plan as required by Board Resolution No. 74-10. The discharge of pollutants in violation of this Order where the Discharger has failed to develop and/or implement a contingency plan will be the basis for considering such a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.

11. This Order expires January 16, 1996. The Discharger must file a Report of Waste Discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.

12. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective ten days after the date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objections. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Steven R. Ritchie, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on January 16, 1991.

STEVEN R. RITCHIE

Executive Officer

Attachments:
Standard Provisions and Reporting
Requirements, December 1986
Self-Monitoring Program

[File No. 2158.5116]
[Originator/LCF]
[Reviewer/RJC]

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

CENTRAL MARIN SANITATION AGENCY

MARIN COUNTY

NPDES PERMIT NO. CA0038628

ORDER NO. 91-003

CONSISTS OF

PART A, dated December 1986

AND

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT AND INTAKE

Station	Description
A-001	At any point in the treatment facilities headworks at which all waste tributary to the system is present and preceding any phase of treatment.

B. EFFLUENT

Station	Description
E-001	At a point in the outfall from the treatment facilities between the point of discharge and the point at which all waste tributary to that outfall is present. (May be the same location as E-001-D.)
E-001-D	At any point in the disinfection facilities for Waste E-001, at which point adequate contact with the disinfectant is assured.
E-001-S	At any point in the treatment facilities following dechlorination.

C. RECEIVING WATER#

Station	Description
C-1	At a point in San Pablo Bay directly above the center of the diffuser
C-2	At a point in San Pablo Bay located 200 feet southerly from the geometric center of the discharge diffuser.
C-3	A a point in San Pablo Bay located 200 feet Northerly from the geometric center of the discharger diffuser.
C-4	At a point in San Pablo Bay located 200 feet easterly from the geometric center of the discharge diffuser.
C-5	At a point in San Pablo Bay located 200 feet westerly from the point of discharge.
C-6	At a point in San Francisco Bay located

2000 feet northerly from the point of discharge.

D. LAND OBSERVATIONS

Station	Description
P-1 thru P-'n'	Located at the corners and midpoints of the perimeter fenceline surrounding the treatment facilities. (A sketch showing the location of these stations will accompany the initial reports).

E. OVERFLOWS AND BYPASSES

Station	Description
O-1 thru O'n'	Bypass or overflows from manholes, pump stations or collection system.

Note: Bypass shall be reported to this Regional Board by telephone immediately after occurance.

A written report shall be filed with the Board within 5 working days which shall contain information such as quantity involved, location, course of bypass, nature of affects, and corrective measures taken.

II. ALLOCATION OF RESPONSIBILITIES

Central Marin Sanitation Agency (the Agency) is responsible for implementing the Self-Monitoring Program except as noted below. Under item I.E (Overflows and Bypasses), reporting collection system overflows is the responsibility of the agency that owns the overflowing facility. Collection system overflows include those from manholes, pump stations, or sewers.

III. SCHEDULE OF SAMPLING, MEASUREMENTS, AND ANALYSIS

A. The schedule of sampling, measurements and analysis shall be that given as TABLE I and TABLE I FOOTNOTES.

B. Paragraph C.5 of Part A is revised to read:
Average values for daily, weekly, and monthly values are obtained by taking the sum of all daily values divided by the number of all daily values measured during the

B. Paragraph C.5 of Part A is revised to read: Average values for daily, weekly, and monthly values are obtained by taking the sum of all daily values divided by the number of all daily values measured during the specified period.

III. REPORTING REQUIREMENTS

A. Self-Monitoring Reports for each calendar month shall be submitted monthly, to be received no later than the 15th day of the following month. The required contents of these reports are specified in section G.4 of Part A.

B. An annual report covering the previous calendar year shall be submitted to the Regional Board by January 30 of each year. The required contents of the annual report are specified in section G.5 of Part A.

C. Any overflow, bypass or other significant non-compliance incident that may endanger health or the environment shall be reported according to sections G.1 and G.2 of Part A.

I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in the Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board No. 90-080.

2. Is effective on the date shown below.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger and revisions will be ordered by the Executive Officer.

STEVEN R. RITCHIE

Executive Officer

Effective Date 12/2/92

TABLE 1

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS (1) (4)

Sampling Station	A-001	E-001		E-001-D	E-001-S		P	O	L	C	
TYPE OF SAMPLE	C-24	G	C-24	G	Cont	Cont	C-24				
Flow Rate (mgd)	D		D		-		-				
BOD, 5-day, 20°C, or COD (mg/l & kg/day)	W		W					-			
Chlorine Residual & Dosage (mg/l & kg/day) (2)						Cont or 2H					
Settleable Matter (ml/l-hr. & cu. ft./day)		3/W									
Total Suspened Matter (mg/l & kg/day)	W		3/W								
Oil and Grease (mg/l & kg/day) (3)		Q									
Coliform (Total) (MPN/100 ml) per req't				3/W							
Fish Tox'y 96-hr. TL % Surv'l in undiluted waste						M[5]					
Ammonia Nitrogen (mg/l & kg/day)			W[8]			M[6]					
Nitrate Nitrogen (mg/l & kg/day)											
Nitrite Nitrogen (mg/l & kg/day)											
Total Organic Nitrogen (mg/l & kg/day)											
Total Phosphate (mg/l & kg/day)											
Turbidity (Jackson Turbidity Units)											
pH (units)		3/W[9]				D[6]					
Dissolved Oxygen (mg/l and % Saturation)		3/W				D[6]					
Temperature (°C)		3/W				D[6]					
Apparent Color (color units)											
Secchi Disc (inches)											
Sulfides (if DO<2.0 mg/l) Total & Dissolved (mg/l)		E[10]									
Arsenic (mg/l & kg/day)			M								
Cadmium (mg/l & kg/day)			M								
Chromium, Total (mg/l & kg/day)			M								
Copper (mg/l & kg/day)			M								
Cyanide (mg/l & kg/day)			Q								
Silver (mg/l & kg/day)			M								
Lead (mg/l & kg/day)			M								

TABLE 1 (continued)
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	A	E-001			E-001 D/ E-001 S			All C	All P	OV			
TYPE OF SAMPLE	C-24	G	C-24	Cont	G	C-24	Cont	G	O	O			
Mercury (mg/l & kg/day)			M										
Nickel (mg/l & kg/day)			M										
Selenium (mg/l & kg/day)			M										
Zinc (mg/l & kg/day)			M										
Phenolic Compounds (mg/l & kg/day)			Q										
Polynuclear Aromatic Hydrocarbons (mg/l & kg/day)			2/Y (7)										
All Applicable Standard Observations			3/W							E(1)			
Unionized Ammonia (mg/l as N)													

LEGEND FOR TABLE

TYPES OF SAMPLES

G = grab sample
C-24 = composite sample - 24-hour
C-X = composite sample - X hours (used when discharge does not continue for 24-hour period)
Cont = continuous sampling
DI = depth-integrated sample
BS = bottom sediment sample
O = observation

TYPES OF STATIONS

I = intake and/or water supply stations
A = treatment facility influent stations
E = waste effluent stations
C = receiving water stations
P = treatment facilities perimeter stations
L = basin and/or pond levee stations
B = bottom sediment stations
G = groundwater stations

FREQUENCY OF SAMPLING

E = each occurence
H = once each hour
D = once each day
W = once each week
M = once each month
Y = once each year

2/H = twice per hour
2/W = 2 days per week
5/W = 5 days per week
2/M = 2 days per month
2/Y = once in March and once in September
Q = quarterly, once in March, June, Sept. and December

2H = every 2 hours
2D = every 2 days
2W = every 2 weeks
3M = every 3 months
Cont = continuous

TABLE I FOOTNOTES

(1) During any time when bypassing occurs from any treatment unit(s) in the treatment facilities the monitoring program for effluent discharged from the treatment plant shall include the following sampling and analyses:

a. Composite sample of the discharge on an hourly basis for the duration of the bypass event, for BOD and Total Suspended Solids analyses.

b. Grab samples at least daily for the duration of the bypass event for Total Coliform, Settleable Matter and Oil and Grease analyses. (Oil and Grease may be done weekly if the bypass is due to wet weather flow)

c. Continuous monitoring or hourly grab samples for chlorine residual measurement.

d. Continuous monitoring of bypassed flow.

(2) Chlorine Residual concentrations shall be monitored both prior to and following dechlorination.

(3) Oil and Grease sampling shall consist of three grab samples taken at equal intervals during the sampling day, with each grab sample being collected in a glass container and analyzed separately. Results for station E-001 shall be expressed as a weighted average of the three values, based upon the instantaneous flow rates occurring at the time of each grab sample. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent as soon as possible after use, and the solvent rinsings shall be added to the wastewater sample for extraction and analysis.

If the plant is not staffed 24 hours per day , then the three grab samples may be taken at approximately equal intervals during the period that the plant is staffed.

(4) Grab samples shall be taken on day(s) of composite sampling.

(5) Fish Toxicity shall be determined using parallel, 96-hour, flow through bioassays using 24-hour composite samples representative of the discharged effluent. One specie shall be three-spined stickleback, and the other shall be either rainbow trout or fathead minnow. Effluent used for fish

bioassays must be undiluted, disinfected, dechlorinated effluent.

(6) These parameters shall be tested for on the sample stream used for the flow-through bioassays, beginning at the start of the bioassay and then daily for the duration of the bioassay test (i.e. at 0,24,48,72, and 96 hours from the start of the bioassay test). Ammonia nitrogen shall be conducted once during the bioassay.

(7) Polynuclear Aromatic Hydrocarbons (PAHs) shall be tested for as identified by EPA Method 610. If a discharge sample exceeds the effluent limitation for PAHs (Effluent Limitation B.6.1.), the concentrations of the individual constituent PAHs shall be reported.

8. Ammonia Nitrogen will continue to be monitored weekly during the months of July, August and September. Monthly monitoring may occur during the remaining months.

9. An in-line pH meter shall continuously monitor effluent quality at the CMSA facility. This meter shall be equipped with an alarm relayed to a central station.

10. Sulfides shall be tested daily in the event that the DO is less than 2.0 mg/l (as determined from the routine DO monitoring whose frequency is 3/W). Once Sulfide testing is initiated, it shall occur daily until the DO returns to a value greater than 2.0 mg/l.